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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,671	06/15/2001	Youichirou Sugino	04558/050001	9498

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EXAMINER	
DICUS, TAMRA	

ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

LD

Office Action Summary	Application No.	Applicant(s)	
	09/882,671	SUGINO ET AL.	
	Examiner	Art Unit	
	Tamra L. Dicus	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18,21-35 and 42-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,21-35 and 42-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. The new Office Action is presented below to better address the shrinkage recitation.

Claim Objection

Claims 49 & 51 comprise a stretched hydrophilic polymer film, which is already claimed in the claim it depends from and does not further limit the claims.

Claim 28 is objected to. In line 3 of claim 28, it appears "form" should be "from".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 21-22, 35, 42-49, and 52 are rejected under 35 U.S.C. 102(b) as being unpatentable over USPN 4,388,375 to Hopper et al.

1. Hopper teaches a polyester based polarizer comprising a stretched polyvinyl alcohol film laminated to a polyester support such as polyethylene terephthalate (PET) via a polyvinyl alcohol adhesive (col. 2, lines 60-61) with a coating of aqueous polyvinyl alcohol (PVA) or polyurethane per instant claims 1-2, 5, 22, 26, and 49. The film thickness ranges from 0.48 to 30 mils (col. 4, lines 47-49), converted is 12.19 –762 microns, which falls within the claimed range of at most 25

microns, 10-18 microns, 20-50 microns, not more than 60 microns, not more than 75 microns, and at most 60 microns of instant claims 3-4, 6, 42, 46, and 47.

2. Regarding the shrinkage factor, while Hopper does not refer to a shrinkage factor per se, Hopper does teach the PVA film should shrink only an insubstantial amount after subjecting the film to 70 degrees C for 300 hours (col. 5, lines 39-42). Thus this teaching meets the recitation of a shrinkage force of at most 4.0 N/cm or from 1.0 to 3.7 N/cm per instant claims 1, 2, 22 and 52 ("insubstantial amount" meets "at most 4.0 N/cm and from 1.0 to 3.7 N/cm"). The dimensional change rate of not more than ±0.7% in a longitudinal direction (MD) after being heated at 70°C for 120 hours (instant claim 21), is inherent as the same material, and similar conditions are provided by Hopper. Regarding claims 42-43, Hopper teaches dying the hydrophilic PVA film in an aqueous bath (water), stretching the film to four times its original width due to heating from 97 to 105 degrees C (swelling treatment), treating the film with an aqueous (water) solution of borax and boric acid (crosslinking treatment and agent as Applicant's disclose on page 1, line 15 and page 17, line 26 of the specification), and drying the film (see col. 6, lines 7-43) (instant claims 42). To instant claim 48, a dye such as iodide is present (col. 6, lines 9-10). Regarding the claims to processes such as stretching, relaxing, and drying steps (claims 44-45), these are process limitations in a product claim. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product

claimed and NOT of the recited process steps which must be established. *In re Brown,* 459 F. 29 531. Both Applicant's and prior art reference's product are the same.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,388,375 to Hopper et al. in view of USPN 6,065,457 to Aminaka.

Hopper essentially teaches the claimed invention as relied upon above.

Hopper does not teach a PVA having a saponification degree of at least 75 mol% or the average polymerization degree from 500-10000 (instant claim 7).

Aminaka teaches optical layers in liquid crystal displays. Aminaka teaches using commercially available PVA having saponification degree of not smaller than 80%, which falls within Applicant's range, and a polymerization degree preferably of not smaller than 200, which is close within Applicant's recited range above. See col. 20, lines 5-12.

It would have been obvious to one having ordinary skill in the art to have modified the polarizer of Hopper to include a PVA having the requirements recited because Aminaka teaches the specific PVA is a commercially available equivalent useful in polarizers for LCDs (see col. 20, lines 5-12) to align discotic compounds found in PVAs to assist in activation by electric or

magnetic fields or light for orientation purposes or to aid in preparing an ellipsoidal polarizing plate (see col. 19, lines 35-col. 20, line 11 and col. 20, lines 22-23 of Aminaka).

4. Claims 8-16, 23-28, 42-47 and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,388,375 to Hopper et al. in view of USPN 6,065,457 to Aminaka.

5. Hopper teaches a polyester based polarizer comprising a stretched polyvinyl alcohol film laminated to a polyester support such as polyethylene terephthalate (PET) (polarizing plate) via a polyvinyl alcohol adhesive (col. 2, lines 60-61) with a coating of aqueous polyvinyl alcohol (PVA) or polyurethane on its surface per instant claims 8, 13-14, 15, and 26. See also abstract. The film thickness ranges from 0.48 to 30 mils (col. 4, lines 47-49), converted is 12.19 –762 microns, which falls within the claimed range of at most 25 microns, 10-18 microns, 20-50 microns, not more than 60 microns, not more than 75 microns, and at most 60 microns of instant claims 24, 25, and 27. Regarding the shrinkage factor, while Hopper does not refer to a shrinkage factor *per se*, Hopper does teach the PVA film should shrink only an insubstantial amount after subjecting the film to 70 degrees C for 300 hours (col. 5, lines 39-42). Thus this teaching meets the recitation of a shrinkage force of at most 4.0 N/cm or from 1.0 to 3.7 N/cm per instant claims 8 and 23, ("insubstantial amount" meets "at most 4.0 N/cm and from 1.0 to 3.7 N/cm"). The dimensional change rate of not more than ±0.7% in a longitudinal direction (MD) after being heated at 70°C for 120 hours (instant claim 16), is inherent as the same material, and similar conditions are provided by Hopper. Regarding claims 35 and 50-51, Hopper teaches dying the hydrophilic PVA film in an aqueous bath (water), stretching the film to four times its original width due to heating from 97 to 105 degrees C (swelling treatment), treating the film with an aqueous (water) solution of borax and boric acid (crosslinking treatment and agent as

Applicant's disclose on page 1, line 15 and page 17, line 26 of the specification), and drying the film (see col. 6, lines 7-43) (instant claims 42). Regarding the claims to processes such as stretching, relaxing, and drying steps (claims 44-45), these are process limitations in a product claim. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown,* 459 F. 29 531. Both Applicant's and prior art reference's product are the same.

Hopper does not teach a protective film or its composition of triacetylcellulose, laminated via an adhesive on the polarizer or the thickness of the protective film as instant claim 8-13 recite.

Aminaka teaches polarizers and optical films used in LCDs. Aminaka teaches a protective layer of triacetylcellulose laminated to a transparent polymer film of PVA via an adhesive layer forming an ellipsoidal polarizing plate. See col. 20, lines 40-col. 21, line 35. Aminaka teaches the thickness of the protective triacetylcellulose ranges from 20 to 500 microns (col. 20, line 63), falling within Applicant's claimed range of at least 80 microns, from 80 – 200 microns (instant claims 10-11).

It would have been obvious to one of ordinary skill in the art to have modified the film of Hopper to further include a protective film/adhesive/polarizer in this order because Aminaka teaches such structure is useful in preparing an ellipsoidal polarizing plate improving a viewing

angle of a LCD of bend alignment mode or homogenous alignment mode without causing color contamination on a displayed image (col. 3, lines 35-50 and col. 4, lines 53-59 of Aminaka). Further it is obvious to utilize the protective film because it is made of the same triacetylcellulose film and functions to serve as a protective layer and Aminaka teaches the material serves as a protective membrane for protecting the PVA film (col. 21, line 19-24). It would have been obvious to one of ordinary skill in the art to use an adhesive to adhere the protective and polarizing layers to result in a laminate for producing an ellipsoidal polarizing plate. Because the protective film thickness falls within the Applicant's range (taught by Aminaka above), and the polarizer thickness falls within Applicant's range (taught by Hopper above), it would have been obvious to have modified the polarizer of Hopper to satisfy the A/B relationship of instant claims 8-9, as they are conventional thicknesses used in an LCD as cited above.

Further, in regards to instant claim 14, while Hopper teaches an adhesive of polyvinyl alcohol, Hopper does not teach the adhesive that adheres a protective film and polarizer is of PVA. However, because Hopper teaches a PVA-based adhesive is a suitable type of adhesive to adhere polarizers to substrates and Aminaka teaches the structure adhering PVA to a protective film, it would have been obvious to utilize a PVA-based adhesive as it serves to adhere two layers to provide a laminate as cited above.

Regarding claim 28, Hopper does not teach a PVA having a saponification degree of at least 75 mol% or the average polymerization degree from 500-10000.

Aminaka teaches optical layers in liquid crystal displays. Aminaka teaches using commercially available PVA having saponification degree of not smaller than 80%, which falls

within Applicant's range, and a polymerization degree preferably of not smaller than 200, which is close within Applicant's recited range above. See col. 20, lines 5-12.

It would have been obvious to one having ordinary skill in the art to have modified the polarizer of Hopper to include a PVA having the requirements recited because Aminaka teaches the specific PVA is a commercially available equivalent useful in polarizers for LCDs (see col. 20, lines 5-12) to align discotic compounds found in PVAs to assist in activation by electric or magnetic fields or light for orientation purposes or to aid in preparing an ellipsoidal polarizing plate (see col. 19, lines 35-col. 20, line 11 and col. 20, lines 22-23 of Aminaka).

Claims 17-18 and 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,388,375 to Hopper et al. in view of USPN 6,065,457 to Aminaka and further in view of USPN 6,361,838 to Miyatake et al.

Hopper in view of Aminaka is relied upon above to claim 8. The combination does not teach further comprising an optical layer selected from a reflector, transreflector, retardation plate, lambda plate, a viewing angle compensating film, or a brightness enhancement plate of instant claims 17 and 29-34.

Miyatake teaches an optical film/member that may be used to produce a multilayer structure by providing optical layers on sides of a polarizing/retardation film that includes absorption types like hydrophilic polymer films of PVA that have been stretched. See col. 7, lines 39-65, and col. 8, lines 5-54. Such optical films, like those of instant claims 17 and 29-34 may be used to produce the following types of films: absorption type, reflection type, scattering type polarizers, retardation films including a quarter-wavelength plate, a half-wavelength plate, a retardation film comprising a uni- or biaxially or otherwise stretched film, a film comprising a

film which has undergone inclined orientation, i.e., which has undergone molecular orientation also in the thickness direction, a film comprising a liquid crystal polymer, a film in which a retardation caused by a viewing angle or birefringence is compensated for, and a film comprising two or more of these retardation films superposed on each other. See col. 8, lines 1-54. Miyatake teaches a polarizing film also includes a polarizing film comprising any of the above-described polarizing films and a transparent protective layer formed on one or each side thereof for the purpose of protection against water. Miyatake does not explicitly define the aforementioned functional films as "brightness-enhanced" or a "transflector". The Examiner takes the position that the phrase "brightness-enhanced" is a functional equivalent of the optical film of Miyatake at col. 7, lines 38-51 since the optical film that functions to improve perceptibility and bright displays as taught by Miyatake at col. 6, lines 50-60. The Examiner also takes the position that "transflector" is synonymous to an optical layer that reflects or scatters light as taught above in the aforementioned film types.

Thus, it would have been obvious to one having ordinary skill in the art to have modified the combination of Hopper in view of Aminaka because Miyatake teaches an optical layer selected from a reflector, transreflector, retardation plate, lambda plate, a viewing angle compensating film, and a brightness enhancement plate for various functions as explained above for light scattering properties, protection against water, to improve perceptibility and bright displays used in multilayered polarizers in an LCD (col. 8, lines 1-66, col. 9, lines 1-36 and col. 11, lines 32-40 of Miyatake).

Further to claim 18, the combination of Hopper and Aminaka does not teach a polarizing plate laminated through an adhesive layer to an optical layer.

Miyatake teaches lamination of said polarizing plate and optical layer via an adhesive in Example 2 for the purpose of adhering the two layers thus forming a multilayered laminate polarizer used in LCDs. Further adhesives layers are present in a laminate as shown by all cited prior art above.

Thus it would have been obvious to one having ordinary skill in the art to have modified the combination to include an adhesive layer laminating a polarizing plate and optical layer because the cited prior art teaches adhesive layers are used to adhere additional layers for the purposes of forming a multilayered optical element used in LCDs and Miyatake teaches an adhesive layer in Example 2 for laminating optical layers.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. Hopper is now used to teach a polarizer having the required shrinkage force. Aminaka is still used in the rejection to teach the PVA properties e.g. saponification degree and the protective film of triacetylcellulose. Miyatake is still relied upon to teach the various functionality films e.g. transflector, retardation, lambda.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamra L. Dicus
Examiner
Art Unit 1774

02/08/05

RENA DYE
SUPERVISORY PATENT EXAMINER
A.U. 1774

2/17/05